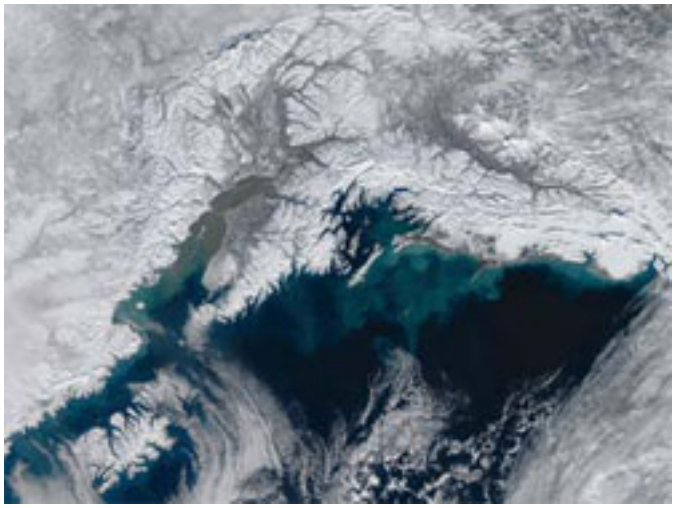

The Climate Variability and Change (CVC) element emphasizes research to improve descriptions and understanding of past and current climate, as well as to advance national modeling capabilities to simulate climate and project how climate and related Earth systems may change in the future. Research coordinated by the CVC Interagency Working Group encompasses time scales ranging from short-term climate variations of a season or less to longer term climate changes occurring over decades to centuries. The CVC element places a high priority on improving understanding and predictions of phenomena that may cause high impacts on society, the economy, and the environment. Examples include identifying the relationships between variations and changes in climate and hurricane activity; improving understanding and predictions of droughts; increasing understanding of and capabilities to predict the El Niño-Southern Oscillation and its attendant impacts; identifying processes that may produce rapid or accelerated climate change; and improving capabilities to observe, understand, and model Earth system components that have high societal and environmental relevance, including sea ice, glaciers, ice sheets, and sea level. Addressing these fundamental issues requires an integrated approach toward understanding the interactions and feedbacks among the different components of the Earth system, including the atmosphere, ocean, land, cryosphere, and biosphere. An ad hoc Modeling Group is addressing modeling needs and approaches related to Earth system modeling, integrated assessment modeling, and modeling of global change impacts, vulnerabilities, and adaptation options.